

## Textbook Alignment to the Utah Core – Geometry

*This alignment has been completed using an “Independent Alignment Vendor” from the USOE approved list ([www.schools.utah.gov/curr/imc/indvendor.html](http://www.schools.utah.gov/curr/imc/indvendor.html).) Yes \_\_\_\_\_ No \_\_\_\_\_*

**Name of Company and Individual Conducting Alignment:** \_\_\_\_\_

**A “Credential Sheet” has been completed on the above company/evaluator and is (Please check one of the following):**

- On record with the USOE.**
- The “Credential Sheet” is attached to this alignment.**

**Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Geometry Core Curriculum**

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**Title:** Geometry ©2007      **ISBN#:** SE: 978-0-618-59540-2 **TE:** 978-0-618-59557-0

**Publisher:** McDougal Littell

**Overall percentage of coverage in the *Student Edition (SE)* and *Teacher Edition (TE)* of the Utah State Core Curriculum: 100 %**

**Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: N/A%**

<b>STANDARD I:</b> Students will use algebraic, spatial, and logical reasoning to solve geometry problems.			
Percentage of coverage in the <i>student and teacher edition</i> for Standard I: <u>100 %</u>		Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard I: <u>N/A%</u>	
<b>OBJECTIVES &amp; INDICATORS</b>		<i>Coverage in Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)</i>	<i>Coverage in Ancillary Material (titles, pg #'s, etc.)</i>
	<b>Objective 1.1: Use inductive and deductive reasoning to develop mathematical arguments.</b>		
a.	Write conditional statements, converses, and inverses, and determine the truth value of these statements.	<b>SE/TE:</b> 79-82, 82-85, 86, 93, 94-95, 135, 138, 160, 213, 231, 898	
b.	Formulate conjectures using inductive reasoning.	<b>SE/TE:</b> 48, 72-73, 75-78, 103, 122-123, 131, 134, 138, 1153, 154, 87, 212, 216, 269, 294, 371, 381, 396, 432, 440, 488, 506, 541, 615, 671	
c.	Prove a statement false by using a counterexample.	<b>SE/TE:</b> 74, 75-76, 78, 93, 99, 111, 134, 615, 898	

<b>Objective 1.2: Analyze characteristics and properties of angles.</b>				
<b>a.</b>	Use accepted geometric notation for lines, segments, rays, angles, similarity and congruence.	<b>SE/TE:</b> 2-5, 5-6, 9-11, 12-13, 24-26, 28-29, 138, 152, 160, 187, 213, 219-220, 224, 225-228, 231, 255, 279, 301, 309, 387, 428, 472		
<b>b.</b>	Identify and determine relationships in adjacent, complementary, supplementary, or vertical angles and linear pairs.	<b>SE/TE:</b> 35-37, 38-41, 59, 62, 64, 123, 125-127, 127-131, 132, 137, 138, 152, 154-156, 157-158, 160, 187, 212, 222, 224, 230, 246, 270, 387, 428, 513		
<b>c.</b>	Classify angle pairs formed by two lines and a transversal.	<b>SE/TE:</b> 149, 150-152, 153, 154-156, 157-158, 160, 162-163, 165-166, 170, 187, 197, 203-204, 206, 209, 211, 212, 255, 387, 428, 513, 647, 658, 866		
<b>d.</b>	Prove relationships in angle pairs.	<b>SE/TE:</b> 35-37, 38-40, 112-114, 116-119, 121, 122-123, 124-127, 127-131, 132, 137, 138, 143, 144, 152, 153, 154-156, 157-160, 170, 187, 197, 203-204, 206, 211, 212, 224, 255		
<b>e.</b>	Prove lines parallel or perpendicular using slope or angle relationships.	<b>SE/TE:</b> 161-164, 165-169, 172-174, 175-176, 178, 180-181, 185, 190-192, 194, 196-197, 201, 204, 206, 209, 211, 213, 255, 379, 456, 521, 525, 663, 768		

<b>Objective 1.3: Analyze characteristics and properties of triangles.</b>				
<b>a.</b>	Prove congruency and similarity of triangles using postulates and theorems.	<b>SE/TE:</b> 234-236, 236-239, 240-242, 243-246, 249-252, 252-255, 257, 259-263, 279, 281, 283-285, 286, 301, 316, 381-383, 384-387, 388-391, 391-395, 417, 419-420, 422, 426, 429, 439, 579, 596, 625, 646, 854		
<b>b.</b>	Prove the Pythagorean Theorem in multiple ways, find missing sides of right triangles using the Pythagorean Theorem, and determine whether a triangle is a right triangle using the converse of the Pythagorean Theorem.	<b>SE/TE:</b> 17-18, 432, 433-436, 436-439, 440, 441-443, 444-447, 463-464, 465, 472, 481, 486, 489, 493, 494-495, 497, 498, 502, 521, 615, 632, 646, 653-654, 656, 679, 705, 736, 908		
<b>c.</b>	Prove and apply theorems involving isosceles triangles.	<b>SE/TE:</b> 264-266, 267-270, 279, 280, 285, 286, 290-291, 321, 323-325, 345, 415, 428, 464, 605, 903		
<b>d.</b>	Apply triangle inequality theorems.	<b>SE/TE:</b> 328-330, 331-334, 335-336, 338-341, 342, 343, 346-347, 348, 352, 464, 521, 658		
<b>e.</b>	Identify medians, altitudes, and angle bisectors of a triangle, and the perpendicular bisectors of the sides of a triangle, and justify the concurrency theorems.	<b>SE/TE:</b> 304-306, 307-309, 312, 313-316, 317, 318, 319-321, 322-325, 326-327, 345-346, 348, 351, 352-353, 398-399, 400-403, 415, 429, 447, 448, 449-452, 453-456, 464, 605, 646, 736, 761, 836, 905, 906-907		

<b>Objective 1.4: Analyze characteristics and properties of polygons and circles.</b>				
a.	Use examples and counterexamples to classify subsets of quadrilaterals.	<b>SE/TE:</b> 514, 522-525, 526-529, 530-531, 532, 522-536, 537-540, 542-545, 546, 552-553, 554-557, 558, 559, 562-563, 564, 569, 579, 670, 768, 910-911		
b.	Prove properties of quadrilaterals using triangle congruence relationships, postulates, and theorems.	<b>SE/TE:</b> 514, 516, 520-521, 536, 539-540, 541, 548-549, 721, 729, 937		
c.	Derive, justify, and use formulas for the number of diagonals, lines of symmetry, angle measures, perimeter, and area of regular polygons.	<b>SE/TE:</b> 506, 507-510, 511-513, 521, 540, 559, 560-561, 564, 568, 632, 670, 762-764, 765-768, 769, 845		
d.	Define radius, diameter, chord, secant, arc, sector, central angle, inscribed angle, and tangent of a circle, and solve problems using their properties.	<b>SE/TE:</b> 49-50, 53-55, 63, 650, 651-654, 655-658, 659-661, 661-663, 664-666, 667-670, 671, 672-675, 676-679, 680-682, 683-686, 687, 688, 689-692, 692-695, 696, 705, 706, 707, 708-711, 712, 714-715, 716-717, 743, 752, 801, 836, 866		
e.	Show the relationship between intercepted arcs and inscribed or central angles, and find their measures.	<b>SE/TE:</b> 659-661, 661-663, 671, 672-675, 676-679, 686, 687, 695, 707, 709-710, 712, 714-715, 716, 743, 747-749, 749-750, 761, 866		

<b>Objective 1.5: Perform basic geometric constructions, describing and justifying the procedures used.</b>				
<b>a.</b>	Investigate geometric relationships using constructions.	<b>SE/TE:</b> 33-34, 152, 153, 169, 195, 235, 258, 261, 307, 312, 314, 323, 408, 527, 594, 625, 629, 665, 671, 704		
<b>b.</b>	Copy and bisect angles and segments.	<b>SE/TE:</b> 33-34, 169, 258, 261, 314		
<b>c.</b>	Construct perpendicular and parallel lines.	<b>SE/TE:</b> 152, 169, 195, 323		
<b>d.</b>	Justify procedures used to construct geometric figures.	<b>SE/TE:</b> 34, 235, 258, 261, 307, 527		
<b>e.</b>	Discover and investigate conjectures about geometric properties using constructions.	<b>SE/TE:</b> 153, 169, 314, 312, 314, 323, 625, 671		
<b>Objective 1.6: Analyze characteristics and properties of three-dimensional figures.</b>				
<b>a.</b>	Identify and classify prisms, pyramids, cylinders and cones based on the shape of their base(s).	<b>SE/TE:</b> 794-795, 798-799, 801, 803-805, 806-807, 810-812, 814, 816, 820, 824-825, 830, 833, 835, 847, 863, 864, 918		
<b>b.</b>	Identify three-dimensional objects from different perspectives using nets, cross-sections, and two-dimensional views.	<b>SE/TE:</b> 146, 550-551, 792-793, 797, 799-800, 803-805, 806, 808, 812, 816, 818, 821, 828, 834, 839, 842		
<b>c.</b>	Describe the symmetries of three-dimensional figures.	<b>SE/TE:</b> 619, 622, 624		
<b>d.</b>	Describe relationships between the faces, edges, and vertices of polyhedra.	<b>SE/TE:</b> 794-797, 798-800, 817, 856-857, 861, 918		

<b>STANDARD II: Students will use the language and operations of algebra to explore geometric relationships with coordinate geometry.</b>				
<b>Percentage of coverage in the <i>student and teacher edition</i> for Standard II: <u>100 %</u></b>		<b>Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard II: <u>N/A%</u></b>		
<b>OBJECTIVES &amp; INDICATORS</b>		<b>Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)</b>	<b>Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)</b>	<b><i>Not covered in TE, SE or ancillaries</i></b>
<b>Objective 2.1: Describe the properties and attributes of lines and line segments using coordinate geometry.</b>				
a.	Verify the classifications of geometric figures using coordinate geometry to find lengths and slopes.	<b>SE/TE:</b> 334, 525, 526-527, 530-531, 532, 538, 542, 546, 549, 555, 558, 564, 569, 579, 670, 768, 910-911		
b.	Find the distance between two given points and find the coordinates of the midpoint.	<b>SE/TE:</b> 15-18, 19-22, 23, 32, 47, 50, 53, 59, 61, 64, 85, 93, 160, 187, 231, 270, 297, 316, 334, 415, 517, 518, 525, 526, 579, 670, 699-700, 768, 896-897		
c.	Write an equation of a line perpendicular or a line parallel to a line through a given point.	<b>SE/TE:</b> 180-181, 185, 197, 205, 206, 210, 213, 239, 246, 255, 363, 901		
<b>Objective 2.2: Describe spatial relationships using coordinate geometry.</b>				
a.	Graph a circle given the equation in the form $(x - h)^2 + (y - k)^2 = r^2$ , and write the equation when given the graph.	<b>SE/TE:</b> 699-701, 702-705, 706, 707, 711, 712, 717, 854, 867, 915		
b.	Determine whether points in a set are collinear.	<b>SE/TE:</b> 2-3, 5-6, 60, 64, 93, 97-98, 99-100, 136, 138, 178, 896		

<b>STANDARD III: Students will extend concepts of proportion and similarity to trigonometric ratios.</b>			
<b>Percentage of coverage in the <i>student and teacher edition</i> for Standard III: <u>100 %</u></b>		<b>Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard III: <u>N/A%</u></b>	
OBJECTIVES & INDICATORS	Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries</i>
<b>Objective 3.1: Use triangle relationships to solve problems.</b>			
a. Solve problems using the properties of special right triangles, e.g., $30^\circ, 60^\circ, 90^\circ$ or $45^\circ, 45^\circ, 90^\circ$ .	<b>SE/TE:</b> 457-460, 461-464, 468, 469-470, 476, 480, 493, 496, 498, 502, 529		
b. Identify the trigonometric relationships of sine, cosine, and tangent with the appropriate ratio of sides of a right triangle.	<b>SE/TE:</b> 466-468, 469-472, 473-476, 477-480, 481-482, 483-485, 485-489, 493, 496-497, 498, 540, 605, 647, 909		
c. Express trigonometric relationships using exact values and approximations.	<b>SE/TE:</b> 467-468, 469, 473-476, 477-478, 909		
<b>Objective 3.2: Use the trigonometric ratios of sine, cosine, and tangent to represent and solve for missing parts of triangles.</b>			
a. Find the angle measure in degrees when given the trigonometric ratio.	<b>SE/TE:</b> 483-485, 485-487, 489, 491, 492, 497, 498, 513, 761, 909		
b. Find the trigonometric ratio given the angle measure in degrees, using a calculator.	<b>SE/TE:</b> 467, 470-472, 474, 477-480, 481-482, 484, 486, 490-491, 492, 496-497, 498, 587, 605, 647, 909		
c. Find unknown measures of right triangles using sine, cosine, and tangent functions and inverse trigonometric functions.	<b>SE/TE:</b> 467-468, 469-472, 474-476, 477-480, 481-482, 483-485, 485-489, 490-491, 492, 496-497, 502, 521, 529, 587, 605, 647, 761, 825, 909		

<b>STANDARD IV: Students will use algebraic, spatial, and logical reasoning to solve measurement problems.</b>			
<b>Percentage of coverage in the <i>student and teacher edition</i> for Standard IV: <u>100 %</u></b>		<b>Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard IV: <u>N/A%</u></b>	
<b>OBJECTIVES &amp; INDICATORS</b>		<b>Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)</b>	<b>Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)</b>
<b>Objective 4.1: Find measurements of plane and solid figures.</b>			
a.	Find linear and angle measures in real-world situations using appropriate tools or technology.	SE/TE: 357, 359, 362-363, 366, 367-369, 374, 378, 383, 386, 390, 394-395, 402-403, 450, 452, 453, 455, 460, 463, 468, 471-472, 474-476, 479, 482, 484-485, 487-488, 490-491, 492, 498, 805, 808, 813, 816-817, 818, 822, 824-825, 830-831, 834, 837, 840, 844, 855	
b.	Develop surface area and volume formulas for polyhedra, cones, and cylinders.	SE/TE: 802, 803-805, 806, 810-812, 820-821, 828, 829, 838, 840	
c.	Determine perimeter, area, surface area, lateral area, and volume for prisms, cylinders, pyramids, cones, and spheres when given the formulas.	SE/TE: 803-806, 806-809, 810-813, 814-817, 818, 819-822, 822-825, 828, 829-831, 832-836, 837, 838-841, 842-845, 846, 847-849, 850-854, 855, 856, 858-860, 861	
d.	Calculate or estimate the area of an irregular region.	SE/TE: 757, 758-761, 773, 774, 776, 778, 788, 816, 844	
e.	Find the length of an arc and the area of a sector when given the angle measure and radius.	SE/TE: 747-749, 749-752, 754, 756-757, 758-759, 761, 778, 779, 782, 784, 788, 866, 917	

<b>Objective 4.2: Solve real-world problems using visualization and spatial reasoning.</b>				
<b>a.</b>	Solve problems using the Pythagorean Theorem and its converse.	<b>SE/TE:</b> 434, 437-439, 443, 445-446, 463, 465, 481, 502, 653-654, 656, 705		
<b>b.</b>	Solve problems using the distance formula.	<b>SE/TE:</b> 21-22, 23, 50, 53, 93, 160, 270, 297, 334, 525, 526, 579, 670, 699-700, 768, 897		
<b>c.</b>	Solve problems involving trigonometric ratios.	<b>SE/TE:</b> 468, 471-472, 474-476, 479-480, 481-482, 484-485, 487-488, 490-491, 492, 496, 498, 503, 647		
<b>d.</b>	Solve problems involving geometric probability.	<b>SE/TE:</b> 770, 771-773, 774-777, 778, 783, 784, 789, 845, 917		